

PATENT
 USSN 09/432,503
 015389-002611US; 018/063c

Claim Amendments

1 to 40. *CANCELLED*

41. *(Currently amended)* A method of increasing the proliferative capacity of a mammalian cell, comprising introducing into the cell *in vitro* a recombinant polynucleotide that encodes a telomerase reverse transcriptase protein comprising SEQ. ID NO:2, or fragment thereof of SEQ. ID NO:2 that contains the telomerase T motif:

Trp-X₁₂-Phe-Phe-Tyr-X-Thr-Glu-X₁₀₋₁₁-Arg-X₃-Trp-X₇-Ile (SEQ. ID NO:119)

wherein X_n is a number "n" of unspecified amino acids each chosen independently;
having wherein the encoded protein has telomerase catalytic activity when complexed with a telomerase RNA, and

whereby introducing the recombinant polynucleotide into the cell increases the proliferative capacity of the cell.

42. *(Previously presented)* The method of claim 41, wherein the cell is a human cell.
43. *(Previously presented)* The method of claim 41, further comprising selecting a cell that expresses increased telomerase catalytic activity as a result of introducing the polynucleotide.
44. *(Previously presented)* The method of claim 43, wherein the cell is a human cell.
45. *(Currently amended)* The method of claim 41, wherein the polynucleotide encodes a full-length γ naturally-occurring telomerase reverse transcriptase.
46. *(Previously presented)* The method of claim 45, wherein the cell is a human cell.
47. *(Previously presented)* The method of claim 45, further comprising selecting a cell that expresses increased telomerase catalytic activity as a result of introducing the polynucleotide.
48. *(Previously presented)* The method of claim 41, wherein the polynucleotide comprises the telomerase reverse transcriptase encoding sequence of SEQ. ID NO:1.
49. *(Previously presented)* The method of claim 48 wherein the cell is a human cell.

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50. *(Previously presented)* The method of claim 48 further comprising selecting a cell that expresses increased telomerase catalytic activity as a result of introducing the polynucleotide.
51. *(Previously presented)* The method of claim 50 wherein the cell is a human cell.
52. *(Previously presented)* The method of claim 41, wherein the recombinant polynucleotide is an expression vector.
53. *(Previously presented)* The method of claim 52 wherein the expression vector is an SV40 virus expression vector, an EBV expression vector, a herpesvirus expression vector, or a vaccinia virus expression vector.
54. *(Previously presented)* The method of claim 52 wherein the expression vector is a retrovirus expression vector.
55. *(Previously presented)* The method of claim 52 wherein the expression vector is an adenovirus expression vector.
56. *(Previously presented)* The method of claim 52 further comprising selecting a cell that expresses increased telomerase catalytic activity as a result of introducing the polynucleotide.
57. *(Previously presented)* The method of claim 52 wherein the cell is a human cell.

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58. (Currently amended)

A method of increasing the proliferative capacity of a mammalian cell, comprising

~~introducing into the cell a recombinant polynucleotide that encodes a telomerase reverse transcriptase protein comprising SEQ. ID NO:2, or fragment thereof having telomerase catalytic activity when complexed with a telomerase RNA,~~

~~whereby introducing the recombinant polynucleotide into the cell increases the proliferative capacity of the cell~~

contacting the cell with an adenovirus vector comprising a DNA sequence that encodes a telomerase reverse transcriptase protein containing the telomerase T motif:

Trp-X₁₂-Phe-Phe-Tyr-X-Thr-Glu-X₁₀₋₁₁-Arg-X₁-Trp-X₇-Ile (SEQ. ID NO:119)

wherein X_n is a number "n" of unspecified amino acids each chosen independently;

wherein the DNA sequence hybridizes to a sequence complementary to SEQ. ID NO:1 at 5°C to 25°C below T_m in aqueous solution at 1 M NaCl;

wherein T_m is the melting temperature of double-stranded DNA having the sequence of SEQ. ID NO:1 under the same reaction conditions; and

whereby introducing the recombinant polynucleotide into the cell increases the proliferative capacity of the cell.

59. (Previously presented) The method of claim 58, wherein the cell is a human cell.

60. (Currently amended) The method of claim 58, wherein the ~~polynucleotide~~ DNA sequence encodes a full-length ~~naturally occurring~~ telomerase reverse transcriptase.

61. (Currently amended) The method of claim 58, wherein the ~~polynucleotide~~ DNA sequence comprises the telomerase reverse transcriptase encoding sequence of SEQ. ID NO:1.

62. (Currently amended) ~~The method of claim 58, wherein the recombinant polynucleotide is an expression vector~~

The method of claim 58, wherein the DNA sequence encodes SEQ. ID NO:2 or a fragment of SEQ. ID NO:2 having telomerase catalytic activity when complexed with a telomerase RNA.

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65. *(Previously presented)* The method of claim 62, wherein the cell is an epithelial cell.
66. *(Previously presented)* The method of claim 62, wherein the cell is a keratinocyte.
67. *(Previously presented)* The method of claim 62, wherein the cell is a hair matrix or hair shaft cell.
68. *(Previously presented)* The method of claim 62, wherein the cell is a hepatocyte.
69. *(Previously presented)* The method of claim 62, wherein the cell is an endothelial cell.
70. *(Previously presented)* The method of claim 62, wherein the cell is a cell of the ciliary epithelium of the eye.
71. *(Previously presented)* The method of claim 62, wherein the cell is a cementoblast, odontoblast, osteoblast, or chondrocyte.
72. *(Previously presented)* The method of claim 62, wherein the cell is a heart cell.
73. *(Previously presented)* The method of claim 62, wherein the cell is a lymphocyte.
74. *(Currently amended)* The method of ~~claim 63~~ claim 41, wherein the cell is an epithelial cell.
75. *(Currently amended)* The method of ~~claim 63~~ claim 41, wherein the cell is a keratinocyte.
76. *(Currently amended)* The method of ~~claim 63~~ claim 41, wherein the cell is a hair matrix or hair shaft cell.
77. *(Currently amended)* The method of ~~claim 63~~ claim 41, wherein the cell is a hepatocyte.
78. *(Currently amended)* The method of ~~claim 63~~ claim 41, wherein the cell is an endothelial cell.
79. *(Currently amended)* The method of ~~claim 63~~ claim 41, wherein the cell is a cell of the ciliary epithelium of the eye.
80. *(Currently amended)* The method of ~~claim 63~~ claim 41, wherein the cell is a cementoblast, odontoblast, osteoblast, or chondrocyte.

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81. *(Currently amended)* The method of ~~claim 63~~ claim 41, wherein the cell is a heart cell.
82. *(Currently amended)* The method of ~~claim 63~~ claim 41, wherein the cell is a lymphocyte.
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